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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/509,807	04/28/00	MODROW	W 3245-734PUS

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EXAMINER

TRAN, L

ART UNIT	PAPER NUMBER
1725	6

DATE MAILED: 07/13/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

**Office Action Summary**

Application No.

09/509,807

Applicant(s)

MODROW ET AL.

Examiner

Len Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 April 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **Priority**

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 112***

2. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "specific" is vague since such term is incorrect to determine the temperature of a material. It should be changed to -- specific heat --.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simsek "Dynamic Simulation of Dual-Line Continuous strip Processing Operations" in view of Chun et al (US 5,509,460).

Simsek discloses a method for determining and controlling the material flow of continuous cast slabs in a continuous casting installation by monitoring and optimizing the temperature on the transport path of the continuous cast slabs between the continuous casting installation and a rolling mill (page 46, 2<sup>nd</sup> paragraph through page 47, 1<sup>st</sup> paragraph and 5<sup>th</sup> paragraph) comprising the method of determining an amount of heat and a temperature profile of the continuous slab by calculating the convective mixing of the amount of heat contained in the continuous cast slab and the time dependent heat loss from the inhomogenously cooling of the continuous cast slab,

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wherein the step of calculating comprises using a mathematical physical model, finite element numerical techniques (page 47, 5<sup>th</sup> paragraph).

However, Simsek lacks the disclosure of determining the liquid phase and physical parameters, such as density, of the slab at the mold exit, controlling material flow in the continuous casting installation via a slab monitoring system and using the amount of heat and the temperature profile determined in step b. as an input to the slab-monitoring system, and wherein step a. comprises determining a surface temperature of the continuous slab, said step c. comprises using a surface temperature of the continuous cast determined in said step a. as an input to the slab monitoring system, and said step c. further comprises automatically controlling the material flow via the slab monitoring system based on the amount of heat and the temperature profile determined in said step b. and the surface temperature of the continuous cast slab.

Chun et al discloses continuous casting and detecting a temperature of the liquid phase of the continuous slab and physical parameters, density, of the slab (col 2, lines 1-24 and col 5, lines 1-10), and controlling the material flow in the continuous casting installation via a slab-monitoring system (400) of the continuous casting installation (fig. 1), wherein in step a. comprises determining a surface temperature of the slab, said step c. comprises using a surface temperature of the continuous cast slab determined in step a. as an input to the slab monitoring system, and said step c. further comprises automatically controlling the material flow via the slab monitoring system (figure 1, col 5, lines 21-50).

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Chun et al teaches the following differences for the purpose of detecting spatial profile of the liquid metal/solid metal interface since it is important for optimizing magnetic stirring and soft reduction techniques employed to minimize phase segregation in high alloy steel casting and in addition having slab monitoring system in order to maximize productivity and minimize initial and operating costs.

Therefore, it would have been obvious to provide Chun et al's method of determining the liquid and physical parameters of the slab and incorporating Chun et al's slab monitoring system as an automatic controller in Simsek in view of the advantage as taught by Chun et al.

#### Citation of relevant art

6. Pleschiutchnigg (US 5,915,457), Rosenstock (US 5,454,417), Chielens et al (US 4,483,387), Welker et al (US 5,988,259), Chun et al (US 5,509,460) are cited to show state of the art.

#### Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Len Tran whose telephone number is (703)605-1175.

The examiner can normally be reached on M-F, 8:30 - 5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 703-308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3602 for regular communications and (703)305-3602 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Len Tran  
Examiner  
Art Unit 1725

(u)

LT  
June 20, 2001



**TOM DUNN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700**